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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,773.	07/24/2003	Masahiko Sasa	116570	7856
25944	7590	11/15/2004		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER HSIEH, SHIH WEN	
			ART UNIT 2861	PAPER NUMBER

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,773

Applicant(s)

SASA, MASAHIKO

Examiner

Shih-wen Hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 2-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-24-03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 12, line 15+, is it possible to show 23P (for print head) at appropriate place in fig. 3?

Claim Objections

2. Claims 4, 5 and 7 are objected to because of the following informalities:

In regard to:

Claims 4 and 5:

Line 3, please change "the vicinity" into "a vicinity" or simply "vicinity" to correct a minor lack of antecedent problem.

Claim 7:

Line 2, please change "the inner diameter" into "an inner diameter" to correct a minor lack of antecedent problem.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (US Pat. No. 4,558,326).

In regard to:

Claim 1:

Kimura et al. teach:

An ink jet printer comprising:

a print head (fig. 1) having a plurality of ink jet nozzles (1, fig. 1) arranged in plural columns;

an ink cartridge (6, fig. 1) including an ink accommodation chamber (5, fig. 1) having deformable wall (refer to col. 3, lines 44-48, where the bag 6 is made of flexible material means the bag is deformable, and the boundary of the bag is the wall) and an air chamber (not numbered in fig. 1, the air chamber is the portion outside the ink bag in the cartridge) for exerting via the wall air pressure on ink accommodated in the ink accommodation chamber, refer to col. 4, line 43+ for introducing pressure air to the ink bag;

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an ink supply tube (10, fig. 1) connecting the ink cartridge to the print head;

an air pump (16, fig. 1) for producing pressurized air for changing a state of ink that located at a tip portion of each of the ink jet nozzles, refer to col. 4, line 43+, please note that when pressure air applies to the ink bag, the ink in the bag is pushed to the print head through the tube (10), as a result of this adding pressure to the ink, the state of ink that located at a tip portion of each of the ink jet nozzles is obviously changed as a result of the pressure being applied to the entire system through the pump (16);

an air supply tube (15, fig. 1) for guiding the pressurized air to the air chamber of the ink cartridge.

The device of Mimura et al. DIFFERS from claim 1 in that it does not teach:

a maintenance unit including a cap member for covering the print head.

A cap used to cover a print head during the head un-used period is well known in the art, refer to MPEP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Mimura et al. to include a capping device as most ink jet printers do for the purpose of preventing ink in the head from dry up during the head un-used period.

Kimura et al. further teach:

wherein the maintenance unit opens the cap member in a state that the pressurized air is supplied to the air chamber of the ink cartridge, refer to 2, in which the

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head is at a state of being purged, ink under pressure are purged out of the nozzles and collected in reservoir (25, fig. 1).

Claim 9:

An ink jet printer comprising:

a print head having a plurality of ink jet nozzles arranged in plural columns;

an ink cartridge including an ink accommodation chamber having a deformable wall and an air chamber adjoining to the accommodation chamber via the wall, the ink accommodation chamber accommodating ink to be supplied to the print head;

an ink supply tube connecting the ink cartridge to the print head;

an air pump for producing pressurized air for changing a state of ink that is located at a tip portion of each of the ink jet nozzles;

an air supply tube for guiding the pressurized air produced by the air pump to the air chamber of the ink cartridge; and

a maintenance unit including a cap member for covering the print head in conducting a maintenance of the print head,

wherein the maintenance unit opens the cap member in a state that the pressurized air is supplied to the air chamber of the ink cartridge.

Rejection:

The subject matters and limitations of this claim are the same as those in claim 1 and are rejected on the basis as set forth for claim 1 discussed above.

Claim 10:

An ink jet printer comprising:

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a print head having a plurality of ink jet nozzles arranged in plural columns;
an ink cartridge accommodating ink to be supplied to the print head;
an ink supply tube connecting the ink cartridge to the print head;
means for covering the print head as to shut communication of ink that located at
a tip portion of each of the ink jet nozzles with ambient air;
means for producing pressurized air to be supplied to the ink cartridge for
changing a state of the ink that is located at a tip portion of each of the ink jet nozzles;
and
means for opening the print head so as to communicate the ink that is located at
a tip portion of each of the ink jet nozzles with the ambient air in a state that the
pressurized air is supplied to the ink cartridge.

Rejection:

The subject matters and limitations of this claim are the same as those in claim 1 and are rejected on the basis as set forth for claim 1 discussed above. In this claim, the means for covering the print head corresponds to the cap member; means for producing pressurized air is the air pump; means for opening the print head is a capping closing/opening device, which is obvious in an ink jet printer having the capping device, so upon receiving instruction from a control scheme, the capping device performs closing or opening operation to close the head in a printer un-used situation or in a printing operation respectively..

Claim 11:

A maintenance method in an ink jet printer, wherein the ink jet printer includes print head having a plurality ink jet nozzles arranged in plural columns, an ink cartridge accommodating ink to be supplied to the print head, and an ink supply tube connecting the ink cartridge to the print head, the maintenance method comprising:

covering the print head so as to shut communication of ink that is at a tip portion of each of the ink jet nozzles with ambient air;

producing pressurized air to be supplied to the ink cartridge for changing a state of the ink that is located at a tip portion of each of the ink jet nozzles; and

opening the print head so as to communicate the ink that is located at a tip portion of each of ink jet nozzles with the ambient air in a state that the pressurized air is supplied to the cartridge.

Rejection:

The method claim is deemed to be made obvious by the functions of the structure in the combination as discussed above.

Allowable Subject Matter

5. Claims 2-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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6. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 2-8 is the inclusion of the limitation of wherein the maintenance unit further comprises a wiper member for wiping over the print head, and the air pump supplies the pressurized air the air chamber of the ink cartridge since a prescribed time before the cap member opens till the wiper member completes wiping. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH



Nov. 10, 2004